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| 10/552,036 | 10/03/2005 | Toyohisa Fujimoto | Q90347 | 6985 |
| 23373 7590 06/03/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | EXAMINER ZIMMER, MARC S | |
| | | | ART UNIT 1796 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/552,036

Applicant(s)

FUJIMOTO, TOYOHISA

Examiner

MARC S. ZIMMER

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-16 is/are rejected.
- 7) ☒ Claim(s) 2 and 8-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 03/05/09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

Claim Objections

Claims 2 and 8-11 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 stipulates that the fraction of polymer component devoid of silicon groups is the plasticizer and, further, says that the amount of polymer not containing silicon groups can be as high as $0.4/1.0 + 0.4 = 0.286$ (100) = 28.6% of the total. This is clearly in conflict with the proviso now added to claim 1 that says that the plasticizer must represent no more than 10 parts per hundred parts resin.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, and 4-16 are rejected under 35 U.S.C. 103(a) Okamoto et al., WO 03/011978. Okamoto discloses compositions comprising organic polymers bearing hydrolysable silyl groups of which oxyalkylene polymers are favored (column 5, lines 1-7). Column 6, lines 30-51 outlines several synthetic strategies for functionalizing the polymer with organosilanes including the same approaches contemplated in Applicants'

claims. In each of Synthesis Examples 1 and 2, there is formed a silane-functionalized polymer wherein 78% and 80% of all chain ends respectively are functionalized with silyl moieties. The Examiner recognizes that this is a slightly higher degree of silylation than is advocated by the claims- 1.5 per molecule translates to 75% of all chain ends however, the rate of silylation is close enough that a significant worsening of properties would not be expected. "A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected [the claimed product and a product disclosed in the prior art] to have the same properties." *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

The addition of fillers and plasticizers is contemplated in column 19.

Concerning the amount of plasticizer, the Examiner appreciates that the exemplified embodiments of Okamoto's invention are those wherein the plasticizer is incorporated in quantities well-exceeding those mandated by the claims. On the other hand, the broader description of this component mentions amounts as low as one part per hundred parts of resin. "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments." *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). Moreover, it is widely documented that plasticizer migration is a problem in polymer sealants and,

hence, the minimization of its quantities would be obvious in those situations where bleed out is more of a concern than are modulus and elongation.

Concerning Applicants' Table 1, the Examiner recognizes that silyl group- and plasticizer content clearly have an impact on modulus, elongation, bleeding, etc. What is not so clear, however, is the criticality of the endpoints of the ranges associated with these parameters as they are reported in the claims. For instance, while inspection of the table does indeed verify that modulus and elongation are raised and lowered respectively when the amount of silyl groups per molecule is increased from 1.2 to 1.6, it is not evident to the Examiner that the increase isn't just a gradual one. That is to say, if criticality is to be attached to 1.5 silyl groups per molecule, then there must be a steep reduction in properties beyond this threshold but that can't be discerned from the data. Likewise, Comparative Example 2, clearly suffers from higher levels of bleed out but, again, the Examiner is unable to determine whether bleed out truly becomes pronounced just beneath 0.8 silyl groups per molecules or, instead, if there is merely a steady rise in bleed out.

As an aside, Example 3 and Comparative 4-6 are not regarded as being adequate trials for comparison because the molecular weight of these polymers and, thus, the molecular weight between crosslinks is significantly different from the other trials.

The rejection over JP 5-339490 is withdrawn because it is acknowledged that the reference perhaps does not provide enough direction to lead one of ordinary skill towards the preparation of a composition having similar polymer silylation rates and plasticizer content. The rejection over Mahdi is likewise withdrawn because the Examiner has become convinced that polymers having no more than 1.5 silyl groups per molecules are not adequately disclosed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC S. ZIMMER whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 13, 2009

/Marc S. Zimmer/
Primary Examiner, Art Unit 1796